

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P331674-840

Luminaire Tested: **SA2XXRDIP-C485D1080U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331674-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C485D1080U840-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 485 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5964.5 lumens
Efficiency: N/A
Efficacy: 120.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

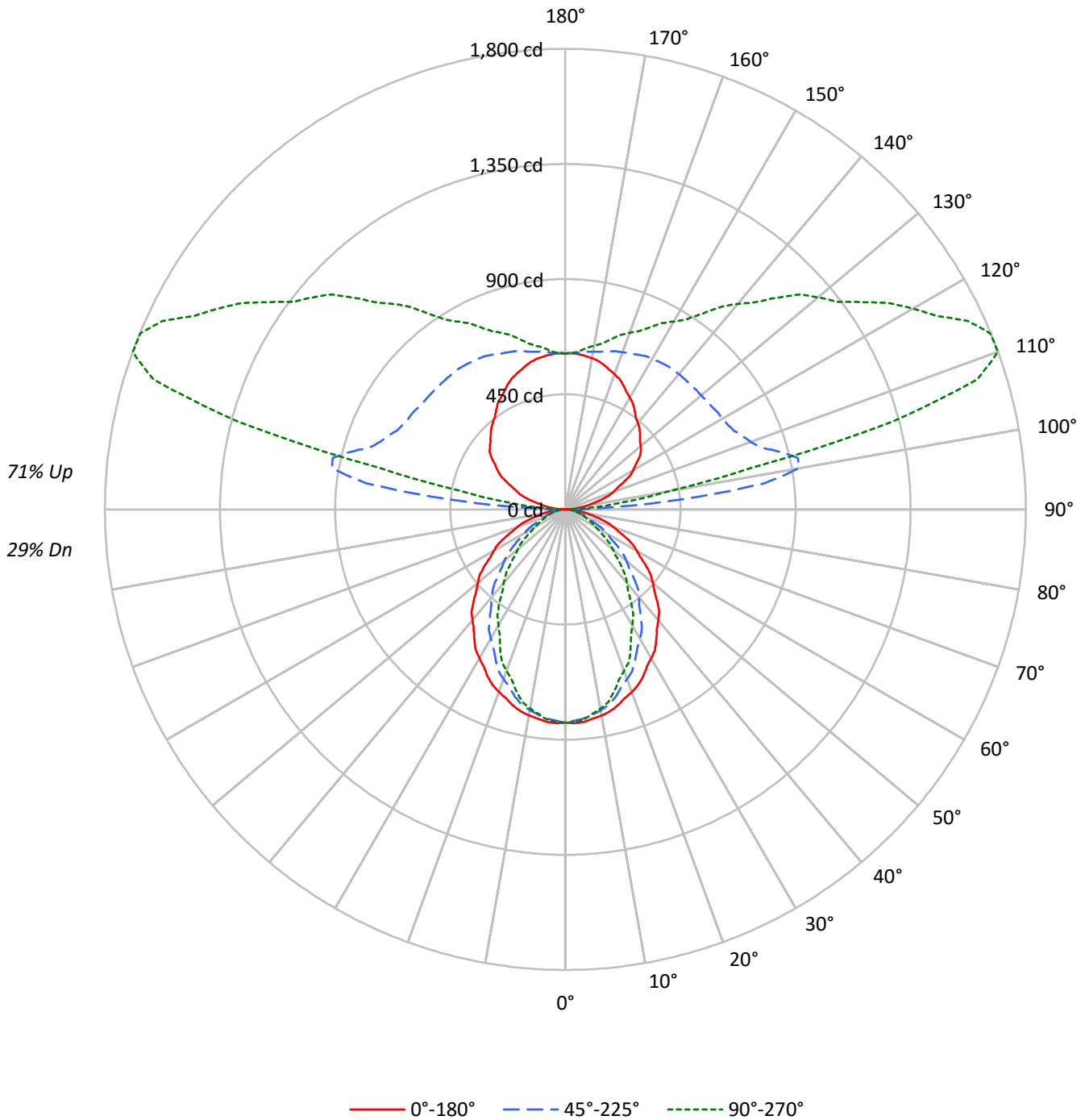
Input Watts (W): 49.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	102	102	102	102	91	91	91	91	72	72	72	53	53	53	37	37	37	29
1	93	89	86	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25
2	85	78	72	68	76	70	65	61	55	52	49	42	40	38	29	28	27	21
3	78	69	62	56	69	62	56	51	49	45	42	37	34	32	26	24	23	18
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	23	22	20	16
5	65	54	47	41	58	49	43	38	39	34	31	30	27	24	21	19	18	14
6	60	49	41	36	54	44	37	33	35	30	27	27	24	21	19	17	16	12
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14	11
8	52	40	32	27	46	36	30	25	29	24	21	23	19	17	16	14	13	10
9	48	36	29	24	43	33	27	22	27	22	19	21	17	15	15	13	11	9
10	45	33	26	22	40	30	24	20	24	20	17	19	16	14	14	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13454	13454	13454
5°	13506	13287	13361
10°	13404	13070	12959
15°	13249	12682	12318
20°	13036	12129	11519
25°	12818	11501	10750
30°	12515	10856	9758
35°	12220	10153	8889
40°	11921	9428	7885
45°	11574	8611	6976
50°	11215	7784	6081
55°	10849	6899	5222
60°	10424	5968	4334
65°	9941	5012	3947
70°	9361	4131	3635
75°	8659	3762	3387
80°	7643	3366	3087
85°	6002	2649	2649



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CATALOG NUMBER: SA2XXRDIP-C485D1080U840-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.0	1.3
10°-20°	214.2	3.6
20°-30°	300.8	5.0
30°-40°	328.0	5.5
40°-50°	301.6	5.1
50°-60°	236.8	4.0
60°-70°	154.4	2.6
70°-80°	79.6	1.3
80°-90°	26.1	0.4
90°-100°	243.9	4.1
100°-110°	827.7	13.9
110°-120°	879.3	14.7
120°-130°	723.9	12.1
130°-140°	581.3	9.7
140°-150°	439.3	7.4
150°-160°	308.7	5.2
160°-170°	181.7	3.0
170°-180°	59.1	1.0
0°-30°	593.0	9.9
0°-40°	921.0	15.4
0°-60°	1459.4	24.5
0°-90°	1719.6	28.8
90°-120°	1951.0	32.7
90°-150°	3695.4	62.0
90°-180°	4245.0	71.2
0°-180°	5964.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	833	833	833	833	833	
5°	833	829	820	826	824	79
15°	793	783	759	745	737	223
25°	720	694	646	616	603	331
35°	620	580	515	469	451	388
45°	507	455	377	326	306	391
55°	385	325	245	202	186	344
65°	260	199	131	107	103	258
75°	139	87	60	55	54	147
85°	32	17	14	14	14	38
90°	1	16	40	38	39	4
95°	41	101	460	174	134	44
105°	143	216	869	1554	1322	152
115°	252	319	727	1501	1740	250
125°	352	416	699	1216	1411	312
135°	413	493	691	1022	1170	319
145°	472	542	687	854	934	296
155°	536	579	668	755	785	247
165°	584	602	639	678	689	165
175°	609	609	615	622	621	58
180°	610	610	610	610	610	



TEST NUMBER: P331674-840
 CATALOG NUMBER: SA2XXRDIP-C485D1080U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3
2.5°	836.4	835.8	835.1	834.4	833.7	832.6	831.2	829.7	828.2	826.8	828.1
5°	833.3	832.5	831.7	830.9	830.0	828.5	826.4	824.2	822.0	819.8	821.3
7.5°	824.8	823.7	822.7	821.6	820.6	818.8	816.3	813.7	811.2	808.7	809.1
10°	817.6	816.4	815.2	814.1	812.8	810.6	807.3	803.9	800.5	797.2	796.7
12.5°	808.5	807.1	805.6	804.2	802.7	799.9	795.6	791.3	787.0	782.7	781.8
15°	792.6	790.8	789.0	787.1	785.3	781.5	775.8	770.1	764.5	758.7	755.6
17.5°	773.3	770.4	767.6	764.8	761.9	756.9	749.6	742.3	735.0	727.6	723.9
20°	758.7	755.4	752.0	748.7	745.3	739.4	731.0	722.7	714.3	705.9	701.8
22.5°	743.1	739.3	735.5	731.7	728.0	721.4	712.0	702.5	693.1	683.6	678.2
25°	719.5	714.2	708.8	703.4	698.0	689.8	678.7	667.7	656.6	645.6	638.7
27.5°	691.2	685.3	679.4	673.7	667.8	658.6	646.2	633.7	621.3	608.7	600.8
30°	671.3	664.9	658.5	652.2	645.8	635.9	622.5	609.0	595.6	582.3	573.7
32.5°	652.0	644.5	637.0	629.7	622.2	611.6	597.9	584.2	570.6	556.9	547.1
35°	620.0	611.4	602.9	594.3	585.7	574.1	559.4	544.6	529.9	515.1	504.5
37.5°	587.9	578.6	569.2	559.8	550.5	537.9	522.2	506.4	490.7	475.0	463.3
40°	565.6	555.6	545.5	535.5	525.4	512.3	496.0	479.8	463.5	447.3	435.4
42.5°	542.7	532.1	521.5	511.0	500.4	486.7	469.9	453.0	436.3	419.5	407.2
45°	506.9	495.6	484.3	473.1	461.9	447.5	429.9	412.3	394.7	377.1	365.2
47.5°	471.8	459.9	448.1	436.2	424.2	409.2	391.0	372.8	354.7	336.5	324.7
50°	446.5	434.5	422.7	410.8	398.9	383.7	365.3	346.9	328.4	309.9	298.4
52.5°	421.7	409.3	396.9	384.5	372.0	356.8	338.7	320.7	302.7	284.7	273.5
55°	385.4	372.3	359.2	346.2	333.2	317.5	299.4	281.3	263.2	245.1	235.1
57.5°	348.1	334.8	321.3	307.9	294.5	279.1	261.8	244.3	226.9	209.5	200.3
60°	322.8	309.4	296.0	282.6	269.1	253.9	236.6	219.3	202.1	184.8	176.2
62.5°	298.0	284.7	271.2	257.8	244.4	229.5	213.1	196.6	180.2	163.7	155.5
65°	260.2	246.6	233.1	219.4	205.9	191.6	176.5	161.4	146.3	131.2	125.5
67.5°	223.7	210.3	196.7	183.3	169.8	156.2	142.7	129.2	115.5	102.0	99.4
70°	198.3	185.3	172.2	159.2	146.0	133.7	122.2	110.6	99.1	87.5	85.8
72.5°	174.2	161.7	149.2	136.6	124.1	113.2	103.9	94.6	85.3	76.0	74.6
75°	138.8	127.0	115.3	103.6	91.8	83.1	77.5	71.7	66.0	60.3	59.2
77.5°	103.9	93.6	83.3	73.0	62.8	56.2	53.5	50.8	48.0	45.2	44.5
80°	82.2	73.6	65.1	56.6	48.0	42.9	41.2	39.6	37.9	36.2	35.5
82.5°	62.3	55.6	49.0	42.3	35.6	31.7	30.6	29.4	28.3	27.2	26.8
85°	32.4	28.9	25.3	21.9	18.4	16.4	15.9	15.3	14.8	14.3	14.3
87.5°	9.9	9.5	9.4	8.8	8.2	8.4	9.5	11.2	12.5	12.8	12.4
90°	1.2	4.6	9.4	11.7	14.0	17.6	23.4	31.7	38.7	39.9	38.7
92.5°	14.3	20.6	29.1	34.2	42.2	53.2	79.8	117.0	150.4	152.5	128.9
95°	41.1	45.7	57.5	68.1	86.8	114.9	169.0	270.9	407.1	459.9	402.4
97.5°	66.9	73.2	85.6	101.6	123.2	155.1	222.9	365.1	591.3	785.1	823.5
100°	90.3	93.8	104.4	123.2	146.6	179.5	241.7	384.8	638.1	926.8	1095.7
102.5°	111.9	114.5	125.0	143.8	168.2	201.1	258.5	385.8	620.4	931.5	1197.1
105°	143.1	147.8	156.0	173.6	199.4	232.3	287.4	391.8	585.4	869.3	1181.3
107.5°	176.9	180.7	188.6	204.8	230.5	263.5	317.0	408.0	568.0	802.6	1078.3
110°	199.4	204.1	211.2	226.4	251.1	285.1	336.7	421.1	564.3	770.7	1013.6



TEST NUMBER: P331674-840

CATALOG NUMBER: SA2XXRDIP-C485D1080U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	220.0	224.8	232.8	247.0	270.7	305.7	355.5	435.3	565.2	750.1	968.6
115°	252.3	258.1	265.1	279.2	302.7	334.4	384.8	456.4	570.2	727.3	912.7
117.5°	285.6	290.2	297.3	309.7	332.2	365.1	411.7	478.9	578.6	716.3	877.5
120°	306.2	310.8	317.9	328.5	351.9	384.8	430.5	493.9	584.2	709.7	858.7
122.5°	325.9	329.6	336.7	348.2	371.6	405.5	448.4	507.1	590.8	706.0	842.7
125°	351.9	355.5	362.5	376.6	400.0	432.9	475.1	528.0	600.7	699.2	820.0
127.5°	372.5	377.3	387.2	402.6	425.2	458.9	500.0	547.3	610.8	695.2	798.9
130°	384.8	389.5	401.2	417.7	441.1	473.9	515.0	559.6	618.2	693.3	784.9
132.5°	396.1	401.7	414.3	431.7	456.2	489.0	528.2	571.8	625.7	692.4	773.6
135°	412.9	417.7	431.7	449.3	476.3	509.2	546.6	587.7	634.7	690.9	757.8
137.5°	428.9	434.5	448.6	467.4	494.1	524.6	561.7	600.0	642.7	690.7	746.8
140°	441.1	445.8	459.9	478.7	504.4	534.9	570.2	606.5	646.4	689.8	740.2
142.5°	453.3	457.1	470.2	489.0	513.8	542.5	576.7	612.2	649.2	689.8	733.7
145°	471.6	476.3	488.1	505.6	529.1	554.9	586.5	619.5	652.3	687.4	725.0
147.5°	491.3	494.8	506.0	522.3	541.8	564.7	594.5	623.4	653.2	683.3	716.1
150°	504.4	508.0	517.4	532.6	550.2	571.3	598.3	625.3	652.3	680.4	708.5
152.5°	517.6	519.3	528.6	542.0	558.7	577.8	602.1	626.2	650.4	675.7	702.0
155°	536.1	537.2	544.3	557.2	570.2	587.7	607.6	627.6	647.5	667.5	689.8
157.5°	551.6	552.8	558.5	569.7	580.0	594.8	611.7	627.6	642.2	659.0	678.3
160°	561.9	563.1	567.7	577.1	586.5	599.5	613.6	627.6	639.3	653.5	669.8
162.5°	572.3	571.6	576.2	583.7	592.2	602.3	614.5	626.7	636.5	648.7	662.4
165°	584.2	583.1	585.4	592.4	598.3	605.3	615.9	624.1	631.2	639.3	649.9
167.5°	594.1	592.7	594.8	599.3	603.5	607.9	615.6	622.5	625.7	631.2	637.7
170°	600.7	598.3	599.5	603.0	605.3	608.8	614.7	620.6	622.9	626.4	631.2
172.5°	604.4	603.0	602.3	605.8	607.2	609.8	613.8	617.7	619.1	620.9	624.6
175°	608.8	607.6	606.5	608.8	608.8	610.1	612.4	614.7	613.6	614.7	615.9
177.5°	611.0	609.0	608.1	610.1	610.1	610.1	611.0	612.9	611.0	610.1	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1



TEST NUMBER: P331674-840

CATALOG NUMBER: SA2XXRDIP-C485D1080U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	833.3	833.3	833.3	833.3	833.3	833.3	833.3	833.3
2.5°	829.4	830.8	832.1	832.6	832.4	832.1	831.8	831.6
5°	822.8	824.4	825.9	826.4	825.9	825.4	824.9	824.4
7.5°	809.5	809.9	810.4	810.2	809.3	808.4	807.6	806.7
10°	796.2	795.7	795.2	794.5	793.5	792.4	791.4	790.4
12.5°	780.9	780.0	779.1	777.8	776.1	774.5	772.7	771.1
15°	752.3	749.2	746.0	743.6	741.8	740.2	738.5	736.9
17.5°	720.0	716.3	712.5	709.1	706.3	703.4	700.5	697.6
20°	697.5	693.4	689.1	685.2	681.6	677.8	674.2	670.4
22.5°	672.8	667.4	662.1	657.9	655.2	652.5	649.7	646.9
25°	631.9	625.0	618.1	613.4	610.9	608.3	605.9	603.4
27.5°	592.8	584.7	576.7	570.8	566.7	562.8	558.8	554.8
30°	565.1	556.6	548.1	541.5	536.9	532.5	528.0	523.4
32.5°	537.3	527.7	517.9	510.9	506.6	502.4	498.1	493.8
35°	494.0	483.4	472.9	465.7	462.1	458.4	454.7	451.0
37.5°	451.7	440.1	428.5	420.5	416.4	412.1	407.9	403.6
40°	423.4	411.5	399.6	391.5	387.2	382.8	378.4	374.1
42.5°	394.9	382.5	370.3	362.0	357.8	353.6	349.3	345.1
45°	353.3	341.4	329.5	321.5	317.5	313.5	309.4	305.5
47.5°	312.9	301.0	289.2	281.4	277.8	274.2	270.4	266.8
50°	286.8	275.3	263.7	256.2	252.7	249.1	245.6	242.1
52.5°	262.3	251.2	239.9	232.8	229.5	226.3	223.0	219.7
55°	225.0	214.9	204.9	198.2	195.1	191.9	188.7	185.5
57.5°	191.1	181.9	172.7	166.7	164.0	161.4	158.6	155.9
60°	167.6	159.2	150.6	145.0	142.3	139.6	136.9	134.2
62.5°	147.3	139.3	131.1	126.2	124.6	123.0	121.4	119.8
65°	119.9	114.1	108.5	105.3	104.8	104.3	103.8	103.3
67.5°	96.7	94.1	91.5	90.0	89.4	88.9	88.4	87.8
70°	84.1	82.5	80.8	79.6	79.0	78.3	77.6	77.0
72.5°	73.2	71.8	70.4	69.5	69.1	68.7	68.3	67.9
75°	58.0	56.9	55.6	54.9	54.8	54.6	54.4	54.3
77.5°	43.9	43.2	42.6	42.1	41.8	41.6	41.3	41.0
80°	34.8	34.2	33.5	33.2	33.2	33.2	33.2	33.2
82.5°	26.4	26.0	25.5	25.3	25.3	25.3	25.3	25.3
85°	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3
87.5°	12.0	11.5	11.8	11.9	11.9	11.9	11.9	11.9
90°	37.6	35.2	37.6	38.7	38.7	38.7	38.7	38.7
92.5°	102.3	87.8	77.9	70.6	69.7	65.9	66.9	65.0
95°	307.4	235.8	186.5	160.7	145.4	136.1	132.6	133.7
97.5°	717.2	586.8	459.9	375.2	319.1	290.2	273.1	263.3
100°	1071.1	925.6	764.9	622.9	525.5	475.1	441.1	420.0
102.5°	1302.9	1270.0	1152.5	1002.1	896.3	810.2	767.7	739.1
105°	1425.3	1557.9	1573.2	1534.5	1461.7	1389.0	1338.6	1322.1
107.5°	1337.2	1536.8	1658.8	1715.6	1724.7	1720.7	1710.6	1688.8
110°	1261.1	1471.1	1621.2	1717.5	1767.9	1790.2	1800.8	1799.6



TEST NUMBER: P331674-840

CATALOG NUMBER: SA2XXRDIP-C485D1080U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1191.6	1393.2	1553.7	1664.0	1734.1	1771.4	1791.4	1797.7
115°	1106.3	1287.0	1440.6	1561.5	1644.8	1698.7	1729.2	1739.8
117.5°	1042.0	1200.6	1340.0	1453.3	1538.2	1595.2	1627.4	1636.3
120°	1010.1	1155.5	1279.9	1386.6	1468.7	1523.9	1557.9	1569.6
122.5°	984.7	1118.0	1235.8	1332.2	1405.8	1460.1	1490.4	1500.2
125°	947.9	1068.7	1171.9	1259.9	1328.0	1372.6	1401.9	1411.3
127.5°	911.5	1020.9	1118.2	1199.4	1258.8	1300.5	1325.9	1333.4
130°	888.1	989.0	1081.7	1159.0	1216.6	1256.5	1279.9	1289.3
132.5°	865.6	959.0	1044.1	1116.8	1173.4	1213.3	1234.9	1243.2
135°	834.0	911.5	989.0	1054.6	1105.1	1143.8	1164.9	1169.6
137.5°	809.0	873.7	935.2	992.5	1038.4	1071.8	1090.4	1097.3
140°	793.0	849.4	903.3	954.9	992.5	1023.0	1040.6	1047.6
142.5°	779.9	827.8	874.2	917.4	953.0	980.8	996.4	997.8
145°	761.3	800.1	836.5	870.5	898.6	918.6	930.3	933.8
147.5°	747.1	777.6	806.0	830.8	854.0	870.0	878.0	880.1
150°	736.7	762.5	787.2	808.3	825.9	840.0	847.0	848.2
152.5°	726.4	750.3	771.2	789.5	803.3	815.6	820.7	820.9
155°	712.1	730.8	748.4	761.3	774.3	782.4	787.2	784.9
157.5°	695.4	711.1	725.9	736.0	745.2	751.9	754.1	754.1
160°	685.1	698.0	710.9	719.1	727.3	733.2	734.4	734.4
162.5°	674.8	685.8	696.8	703.2	711.3	715.4	716.5	715.6
165°	659.3	667.5	675.7	680.4	685.1	689.8	689.8	688.6
167.5°	644.5	650.9	656.5	660.8	662.8	665.4	665.2	663.8
170°	637.0	640.6	645.2	647.5	648.7	652.3	651.1	648.7
172.5°	628.5	631.2	634.9	636.3	637.5	639.1	637.9	636.5
175°	619.5	620.6	621.8	622.9	622.9	624.1	622.9	620.6
177.5°	612.9	612.9	613.8	613.8	613.8	613.8	612.9	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1

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